

(Embodiment)

Hereinafter, an embodiment of the invention will be explained with reference to the drawings.

First, in Figs. 1 to 4, a reference numeral 1 denotes a casing made of composite resin. The casing is formed of a casing main body 1a and a mask 1b, which is integrally coupled to the casing main body 1a by means of the claw fitting or screws. Reference numerals 2 and 3 denote a pair of printed boards. These printed boards 2, 3 are housed within the casing 1 so as to be in parallel to each other with a space therebetween. These printed boards 2, 3 are positioned by a plurality of projections 4 integrally formed with the casing 1 within the casing and attached to the casing by means of a plurality of screws 5. A reference numeral 6 denotes a battery cover made of composite resin. The battery cover is attached by means of screws to an opening 7 provided at the mask 1b so as to be detachable. Incidentally, a plurality of ribs 8 are integrally formed at the lower surface of the battery cover 6.

Next, in Figs. 1 to 4, a reference numeral 10 denotes a battery holding portion integrally formed within the casing 1. Actually, the battery holding portion 10 is integrally formed within the mask 1b of the casing 1 and disposed between the pair of printed boards 2 and 3.

Next, in Fig. 5, the battery holding portion 10 has an almost

L-shape in its section and integrally includes a battery supporting plate 11 of a V-shape having a low height, a plurality of supporting arms 12 provided at the one side portion thereof in its width direction, a plurality of elastic arms 13 each provided between the plurality of supporting arms 12, a plurality of pressing claws 14 respectively provided at the upper ends of the elastic arms 13, and a stopper 15 provided at one end of the battery supporting plate 11 in the longitudinal direction thereof. The battery holding portion 10 is integrally formed with the mask 1b through the supporting arms 12 in a cantilever manner.

The battery holding apparatus according to the invention is configured in the aforesaid manner.

Next, the procedure for attaching the battery will be explained. Incidentally, a battery 17 is a cylindrical battery for backing-up a microcomputer.

In a state where the battery cover 6 is removed as shown in Fig. 4, the battery 17 is inserted between the printed boards 2 and 3 within the casing 1 from the opening of the casing 1, and then the battery 17 is pushed with a relatively large force in the direction indicated by an arrow a in the horizontal state against the battery supporting plate 11 of the battery holding portion 10, as shown in Figs. 1 to 3.

At this time, as shown in Fig. 2, the plurality of elastic arms 13 once move in the direction indicated by an arrow b against the elastic force thereof, then the battery 17 enters under the plurality of

pressing claws 14, and the plurality of elastic arms 13 elastically restore in the direction indicated by an arrow c.

Then, as shown in Fig. 2, the plurality of pressing claws 14 of the plurality of elastic arms 13 press the battery 17 in the inclined downward direction indicated by an arrow d, whereby the battery 17 is elastically pressed from the direction indicated by the arrow d against the printed board 2 and so fixed thereto.

Incidentally, as shown in Fig. 3, the battery 17 is sandwiched at its both ends 17a and 17b between the stopper 15 and the side wall 1c of the casing 1 and so restricted in its axial movement.

After the attachment of the battery 17, the coupling cords 18 of the battery 17 are coupled to a connector 19 provided on the printed board 3. Then, the battery cover 6 is attached to the casing 1 thereby to close the opening 7. In this case, the battery cover 6 auxiliarily presses the battery 17 from the direction indicated by the arrow a.

As described above, according to the battery holding apparatus according to the invention, the battery 17 can be easily attached on the battery holding portion 10 by merely pressing the battery with a relatively small force from the direction indicated by the arrow a. In the case of detaching the battery 17, the battery 17 can be detached by pulling out it with a relatively slight force in the direction opposite to that indicated by the arrow a in the similar manner. Since the battery holding portion 10 is made of the composite resin, even if the battery holding portion 10 is brought in contact with electrically

conductive portions of the printed boards 2 and 3, there do not arise such phenomena that the circuits of the printed boards 2 and 3 are short-circuited and the battery 17 is leaked or short-circuited.